

## CHAPTER 5

## LOCKOUT/TAGOUT OF ENERGY SOURCES

5-1. **GENERAL.** This chapter details the procedures for using lockout/tagout devices aboard US Army watercraft.

5-2. **DISCUSSION.** A lockout/tagout procedure is necessary due to the complexity of modern Army watercraft and the cost and potential affects of delays associated with equipment down time. The procedure is also necessary due to the hazards to personnel which could result in their injury or in the worse case, death. This lockout/tagout program is mandatory for all Army watercraft. The program is designed to notify personnel that locked/tagged equipment or systems are NOT to be operated under any circumstances. The lockout/tagout system consists of a series of locks and tags that are attached to individual components to indicate that they are restricted from operation or that SOPs must be modified due to abnormal operating conditions. Each tag contains the necessary information to prevent a possible injury to personnel or damage to installed equipment. Tags associated with the tagout procedure should never be used for valve identification, for marking leaks, or any other purpose not specified in this tagout procedure.

The use of tags or other labels is not a substitute for other safety measures such as chaining or locking valves, removing fuses, or racking out circuit breakers. However, tags will be attached to the fuse panel, racked out circuit breaker cabinet, or locked valve, to indicate the need for such action. If any component has more than one type of tag or sticker attached; the DANGER (RED) tag, when present, will take precedence over all other tags or stickers.

Standard lockout/tagout procedures are to be used for all maintenance, including work to be done by support maintenance units and local contractors. Each maintenance action will require its own set of tags even if two or more maintenance actions require the same equipment to be tagged. Never rely on the tags from other maintenance actions to provide protection for the work you are assigned to do. Lockout/tagout procedures will be enforced at all times. Violation of any tag compromises the entire tagout system and could in itself have serious consequences. Therefore, strict adherence to the tagout procedure without exception is required by all personnel.

5-3. **DEFINITIONS.** The following describes terms related to lockout/tagout procedures.

- *Authorizing officer.* The person with the authority to sign tags to be issued or cleared is the Authorizing Officer. The Authorizing Officer is responsible for ensuring that persons assigned to make a tagout are qualified to perform the duties pursuant to this instruction. The Authorizing Officer for Army watercraft will be the Chief Engineer. He is the one who locks out or tags out machines or equipment in order to perform maintenance, repair, or replacement of equipment.

- *Energy isolating device.* A mechanical device that physically prevents the release or transmission of energy. These devices include but are not limited to the following:

- Manually operated breakers, disconnects, or switches.
- Valves.
- Blank flanges.

## NOTE

Push buttons, selector switches, and other types of circuit devices **ARE NOT** energy isolating devices.

- **Energy source.** Any device, component, or system which contains potential energy capable of injuring personnel or damaging installed equipment. Energy sources may be electrical, pneumatic, hydraulic, thermal, chemical, or in a mechanical form such as a rotating element.
- **Lockout device.** A device that uses a positive means such as a lock to hold an energy isolating device in a safe position preventing the energizing of equipment or the release of another form of energy. Lockout devices include any device which mechanically prevents the energy isolating device from being repositioned. This may be as simple as wire rope with clips.
- **Maintenance action.** Any preventative or corrective maintenance performed by the vessel's crew and support unit maintenance personnel and private contractor personnel. Each maintenance action will require its own set of tags. This does not include maintenance performed during a cyclic maintenance period. Lockout/tagout will be governed by the shipyard performing the cyclic maintenance.
- **Tagout.** Tags affixed to energy isolating devices for warning purposes. They **DO NOT** provide the physical restraint that lockout devices provide. These tags are as follows:

- **Danger tag (see Figure 5-1, page 5-4).** This tag is red. It prohibits the operation of equipment that could jeopardize the safety of personnel or endanger equipment and associated systems. Under no circumstances will equipment be operated when danger tags are attached. Laminated danger tags intended for repeated use will not be used aboard Army watercraft.
- **Caution tag (see Figure 5-2, page 5-5).** This tag is yellow. It is used as a precaution to advise personnel of temporary special instructions or to indicate that unusual caution must be exercised to operate equipment. These instructions must state the specific reason why the tag is installed. The phrase "Do not operate without the Chief Engineer's permission" is not acceptable since no equipment should be operated without direct permission.

- **Tagout log.** The tagout log consists of the Tagout Index, active Tagout Record Sheets, and the inactive Tagout Record Sheets. The purpose of the log is to provide a ready reference of all active tagouts, ensure that serial numbers are sequentially issued, and assist in conducting audits and reviews of the tagout program for the vessel in question. The Tagout Index (see Figure 5-3, page 5-6) and Tagout Record Sheet (see Figure 5-4, pages 5-7 and 5-8) may be locally reproduced.

5-4. **PROGRAM RESPONSIBILITIES.** The following are the responsibilities of the chief engineer, company commander, and company and/or battalion marine maintenance officer.

- a. **Chief Engineer.** The vessel chief engineer is responsible for enforcing these procedures aboard the watercraft to which he is assigned. Aboard Army watercraft, the chief engineer is the Authorizing Officer.

b. **Company Commander.** The company commander is responsible for ensuring his unit is in compliance with these procedures. He also makes sure that these procedures are addressed within the company maintenance SOP to include the proper indoctrination of new unit personnel.

c. **Company and/or Battalion Marine Maintenance Officer.** The company/battalion marine maintenance officer will routinely audit individual vessels to ensure compliance with this program.

5-5. **APPLICATION.** These requirements apply to all maintenance actions performed aboard Army watercraft where the unexpected energizing, startup, or release of stored energy of equipment would be likely to endanger personnel or the equipment itself.

5-6. **PROCEDURES.** The following describes lockout/tagout procedures to be followed by all Army watercraft personnel.

a. **Preparation of Tags and Logs.** Danger and Caution tags will be prepared as follows:

(1) Each tagout action is assigned a serial number in sequence from the Tagout Log Index (see Figure 5-3). This serial number will also be used to identify each tag associated with the tagout action. When a tagout action requires more than one tag, the same base number will be used with a sequence number to identify individual tags (for example, 001-1, 001-2, and so on).

(2) Tagout entries will provide sufficient information to give personnel reviewing the log a clear understanding of the purpose and necessity for each tagout action.

(3) Enough tags and lockout devices will be used to completely isolate the system or component being worked on and to prevent operation of a system or component from all stations that could exercise control. System diagrams and circuit schematics should be used to determine the adequacy of all tagout actions.

(4) The person requesting the tags will prepare the Tagout Record Sheet (see Figure 5-4) and associated tags. Figures 5-1 and 5-2 contain detailed instructions for completing associated tags. Figure 5-4 contains detailed instructions for completing the Tagout Record Sheet.

(5) The Authorizing Officer (Chief Engineer) will review the tagout log entries and tags for completeness and accuracy. When satisfied, the Authorizing Officer will sign the Tagout Record Sheet and tags authorizing the installation of the tags.

(6) The person attaching the tags and lockout devices will ensure that the items being tagged are in the prescribed position or condition (for example, shut, locked shut, fuses removed, and so on) exactly as stated on the tag, then sign and attach the tags and locking devices if required. The tags will be securely attached so they are apparent to anyone who may try and operate the component.

(7) After the tag is attached, a second person will independently verify the tagged equipment or component is in the position or condition indicated on the tag and that the tag and lockout device, if required, is properly attached. That person will sign the tags and the Tagout Record Sheet. Only qualified personnel will perform the second check of tag installation.

PROCEDURES FOR COMPLETING THE DANGER TAG			
Step	Action	By Whom	Location On Tag
1	Select the proper tag. (Example: Danger, Caution)	Person doing work	
2	Fill in the system comp. identification. (Example: #1 SSDG)	Person doing work	A
3	Fill in date/time.	Person doing work	B
4	Indicate position or condition of item being tagged.	Person doing work	C
5	Enter serial # in num. order from Tagout Index.	Person doing work	E
*6	Authorizing Officer signs tag.	Chief Engineer	F
7	Position the valve or component, install locking devices if required. Sign tag and hang.	Person doing work	D
8	Second person performs independent check and signs tag.	Person checking tags	H

\*Before the Authorizing Officer signs the tag, the Tagout Record Sheet must be completed by the person initiating the tagout.

This table describes the DANGER tag

TAG	COLOR	FUNCTION	Operate The Component?
DANGER	RED	Prevent equipment from being energized	NO

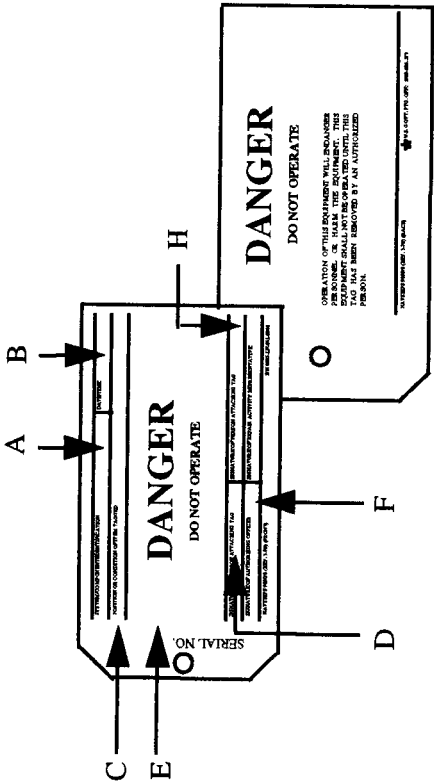


Figure 5-1. Danger tag

PROCEDURES FOR COMPLETING THE CAUTION TAG			
Step	Action	By Whom	Location On Tag
1	Select the proper tag. (Example: Danger, Caution)	Person doing work	
2	Fill in the system comp. identification. (Example: #1 SSDG)	Person doing work	A
3	Fill in date/time.	Person doing work	B
4	Indicate temporary precautionary instructions.	Person doing work	C
5	Enter serial # in num. order from Tagout Index.	Person doing work	E
*6	Authorizing Officer signs tag.	Chief Engineer	F
7	Place the tag onto the equipment and sign tag.	Person doing work	D
8	Second person performs independent check and signs tag.	Person checking tags	H

\*Before the Authorizing Officer signs the tag, the Tagout Record Sheet must be completed by the person initiating the tagout.

This table describes the CAUTION tag

TAG	COLOR	FUNCTION	Operate The Component?
CAUTION	YELLOW	Temporary precautionary instructions	YES

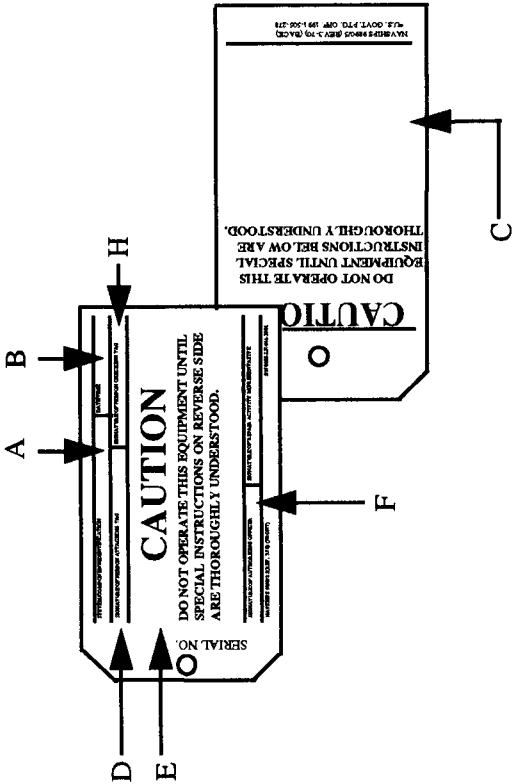


Figure 5-2. Caution tag

[illegible]

*Figure 5-3. Tagout index*

DANGER/CAUTION TAGOUT RECORD SHEET							
SYSTEM OR COMPONENT A				LOG SERIAL NUMBER A			
REASON FOR TAGOUT:  B							
PERSONNEL/EQUIPMENT HAZARDS INVOLVED (MANDATORY FOR DANGER TAGS):  B							
AMPLIFYING INSTRUCTIONS (MANDATORY FOR CAUTION TAGS):  B							
WORK NECESSARY TO CLEAR TAG(S) (INCLUDING TESTS):  B							
TAG NO.	LOCATION	TAGGED POSITION/ CONDITION	POSTED BY (INITIAL)	POSTING CHECKED BY (INITIAL)	CLEARANCE AUTHORIZED (SIGNATURE)	DATE/TIME CLEARED	CLEARED BY (INITIAL)
C	D	D	F	G	H	I	I
SIGNATURE OF AUTHORIZING OFFICER:				DATE/TIME:			
E				E			

Figure 5-4. Tagout record sheet

PROCEDURES FOR TAGOUT RECORD SHEET	LOCATION
Log serial number. Each tagout is assigned a log serial number in sequence. The Tagout Index will be used for assigning log serial numbers. Enter the system or component being tagged out.	<b>A</b>
The reason for the tagout, the hazards involved, amplifying instructions, and work necessary to clear the tags will be sufficiently detailed to give watchstanders reviewing the Tagout Log a clear understanding of the purpose of and necessity for each tagout action.	<b>B</b>
Enough tags should be used to completely isolate the system, piping, or circuit being worked on or to prevent operation of a system. Each tag will contain the Log serial number followed by a dash and number (Example: 001-1). The -1 indicated the first tag for serial number 001. Additional tags would be numbered -2, -3, and so on.	<b>C</b>
The location (for example #1 SSDG circuit breaker) and the position/condition (for example: open, shut, locked shut, racked out, fuses removed, and so on) of the tagged item should be indicated by the most easily identifiable means. The position/condition column need not be filled in for caution tags.	<b>D</b>
The Authorizing Officer will review the Tagout Record Sheet and tags for completeness and accuracy. When satisfied, he/she will sign and enter the date/time the Tagout Record Sheet and tags authorizing the tags to be installed.	<b>E</b>
The individual installing the tags and locking devices will reposition the item to conform with the required position/condition as stated on the tag. He/she will then sign the tag and then hang it. This same individual will then initial the Tagout Record Sheet indicating the tag and locking devices were installed.	<b>F</b>
After the person initiating the tagout has completed installing the tags, a second individual will independently check each tag to ensure the tag and any locking devices are properly installed and the item is in the proper condition/position. This individual will sign the tag and then initial the Tagout Record Sheet to indicate the tag was correctly installed.	<b>G</b>
After the work is completed, the Authorizing Officer (Chief Engineer) will inspect and when satisfied, authorize removal of the tags by signing the Tagout Record Sheet.	<b>H</b>
The individual assigned to clear the tags and locking devices will enter the date/time the tag was cleared and initial the Tagout Record Sheet indicating the tag was removed. All removed tags will be returned to the Authorizing Officer for destruction. The Tagout Record Sheet will be filed in the inactive section of the Tagout Log for six months.	<b>I</b>

*Figure 5-4. Tagout record sheet (continued)*



b. **Tag Removal.** Danger and Caution tags will be removed immediately when the situation requiring the tagout has been corrected. Danger tags will be properly cleared and removed before a system or portion of a system is operationally tested and restored to service.

(1) No tags and lockout devices will be cleared without the approval of the Authorizing Officer. The Authorizing Officer's approval will be annotated on the Tagout Record Sheet indicating which tags are to be removed.

(2) The person who initiated the tagout should, if possible, be the person who clears the tags. However, do not delay the removal of tags when work is completed and the individual is not available.

(3) As the tags and lockout devices are removed, they will be returned immediately to the Authorizing Officer. Using the returned tags and Tagout Record Sheet, the Authorizing Officer will verify that all the tags have been cleared by all parties. The date and time cleared will be annotated on the Tagout Record Sheet and the date entered on the Tagout Index Sheet.

(4) Removed tags will be destroyed after they have been delivered to the Authorizing Officer. The Authorizing Officer will file it in the inactive section of the Tagout Log. Inactive Tagout Record Sheets will be maintained for six months, then destroyed.

c. **Lost or Missing Tags.** Tags which are missing or have come off the item to which they are to be attached will immediately be reported to the Authorizing Officer.

(1) The Authorizing Officer will direct a new tag to be added to the Tagout Record Sheet using the above procedure for initiating a tagout.

(2) After the new tag is installed and verified by a second party, the Authorizing Officer will then clear the old tag from the Tagout Record Sheet using the above procedures for clearing/removing tags.